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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,499	06/13/2001	Toshinori Iinuma	P101201-0002	2770

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EXAMINER

CONTEE, JOY KIMBERLY

ART UNIT	PAPER NUMBER
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2686

DATE MAILED: 12/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/856,499

Applicant(s)

IINUMA, TOSHINORI

Examiner

Joy K Contee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-9,11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-9,11 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 3-5 and 10-12 is withdrawn in view of the newly discovered reference(s) to Kobayakawa et al. (Kobayakawa), U.S. Patent No. 6,058,318. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1,4-9,11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (Watanabe), U.S. Patent No. 5,767,806, in view of Kobayakawa, U.S. Patent No. 6,058,318.

Regarding claims 1 and 9, Watanabe discloses an adaptive array apparatus (and method) that includes a plurality of radio units that each have a transmitting unit, a receiving unit, and an antenna, the adaptive array apparatus (and method) comprising:

storing means for storing (i.e., inherently the arithmetic processing unit stores the detected phase data of the reception RF signals for subsequent comparison and generating means for generating the compensation value) a separate compensation value (i.e., reads on phase and amplitude data) for each radio unit (transmit/receive modules), each compensation value reflecting phase propagation characteristics of the

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receiving unit and the transmitting unit in the corresponding radio unit (col. 10, lines 25-30); and

compensating means (i.e., reads on beamforming means) for compensating, for each radio unit (i.e., reads on separately "weighting"), a phase amount used when generating a directivity pattern for an output signal by adding the compensation value corresponding to the radio unit to the phase amount (col. 2, lines 60-64 and col. 4, lines 3-11).

Watanabe fails to disclose generating means including: a generating unit for generating test signals; first and second detecting units for detecting when the test signal passes the transmitting unit (a first phase shift value) and a second phase shift value, respectively and a calculating means for calculating a phase shift difference between the receiving unit and the transmitting unit using both the first and second phase shift value and for setting the calculated phase shift difference as the compensation value for the radio unit.

In a similar field of endeavor, Kobayakawa discloses a generating unit for generating test signals; first and second detecting units for detecting when the test signal passes the transmitting unit (a first phase shift value) and a second phase shift value, respectively and a calculating means for calculating a phase shift difference between the receiving unit and the transmitting unit using both the first and second phase shift value and for setting the calculated phase shift difference as the compensation value for the radio unit (col. 2, lines 27-51 and col. 6, lines 15-64).

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify Watanabe to include a required phase compensation amount for the purpose of enhancing the beam forming efficiency (see Kobayakawa, col.22, lines 47-55).

Regarding claims 4 and 11, Watanabe as modified by Kobayakawa discloses the adaptive array apparatus of claims 1 and 9, respectively. Kobayakawa further discloses wherein the calculating unit calculates the compensation values by performing a subtraction using the second phase shift value and a value that is double the first phase shift value (i.e., reads on the second phase shift amount is obtained by adding the first phase shift amount) (col. 11, line 56 to col. 12, line 19).

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify Watanabe to include the subtraction from a phase shift value that is double the first phase shift value for the purpose of enhancing beam forming efficiency.

Regarding claims 5 and 12, Watanabe as modified by Kobayakawa discloses the adaptive array apparatus of claims 4 and 11, respectively. Watanabe further discloses wherein the generating means generates the compensation values at a predetermined interval (reads on time required to detect the variation amount) (col. 5, lines 5-9 and lines 16-23 and col. 9, lines 50-60).

Regarding claims 6 and 8, Watanabe as modified by Kobayakawa disclose the adaptive array apparatus of claims 5 and 7, respectively Watanabe further discloses wherein the predetermined interval used by the generating means is period that is determined according to (1) a degree to which a difference in phase shift amounts

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between the transmitting unit and the receiving unit of a radio unit changes over time (reads on time required to detect the variation amount), and (2) a permitting range for the difference in phase shift amounts (reads on delay times) (col. 5, lines 5-9 and lines 16-23 and col. 9, lines 50-60).

Regarding claim 7, Watanabe discloses the adaptive array apparatus of claim 2, wherein the generating means generates the compensation values at an inherent predetermined interval (i.e., a short period of time because of simultaneous calibration) (col. 4, lines 18-22 and col. 10, lines 51-59).

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joy K Contee whose telephone number is 703-308-0149. The examiner can normally be reached from 5:30 a.m. to 2:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 703-305-4379. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

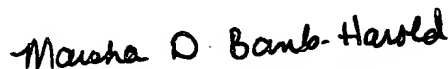
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 703-305-4379. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Joy Contee

December 6, 2004


MARSHA D. BANKS-HAROLD
SUPERVISORY PATENT EXAMINER
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